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ABSTRACT

This paper describes the use and challenges of microcomputers in guidance and counseling. Following introductory remarks on the technological advancement of computers and their impact, currently available career guidance systems, testing systems (including psychological testing, interviewing, and test preparation), administrative systems, and personal counseling systems are itemized. Each listing contains a brief annotation and the microcomputer for which the software is designed. Issues which have been raised by the growing attention to the use of microcomputers in counseling are discussed, including quality of programs, cost, theoretical assumptions, context of use, approach-avoidance behavior, confidentiality, and how to get started. Challenges to the profession, (e.g., literacy, knowledge of software, and application designs) are discussed. The paper concludes with proposals for state and national level leadership tasks and roles. (BL)

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MICROCOMPUTERS IN COUNSELING

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

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Tom, who is feeling depressed, sits down at his friend's TRS-80 microcomputer. Hesitating for a moment, he slowly lifts the telephone and dials the access numbers for the CompuServe information network. Upon hearing the connect signal, he places the phone receiver into the modum and turns to the television monitor. How he wishes his friend were here; he needs to talk to someone.

Uncertainly, he studies the menu of services and selects "Eliza" from the "games" available, obtaining the following response:

Eliza

> Eliza is an interactive program which is capable of carrying on a simple conversation. It plays the role of a 'psychiatrist', and will try to get you to provide more detail on topics that you mention. Such sentence patterns as 'I dreamed' 'I need' "I believe', 'there are', 'my' will keep Eliza going.

Once Tom is connected to Eliza, "she" initiates a conversation:

HELLO. WHAT'S ON YOUR MIND?
I'm depressed
I AM NOT SURE I UNDERSTAND YOU FULLY
My mother scares me
TELL ME MORE ABOUT YOUR FAMILY.
My mother drinks a lot
WHO ELSE IN YOUR FAMILY DRINKS A LOT?
My father

LET'S DISCUSS FURTHER WHY YOUR MOTHER SCARES YOU

She beats me

WHAT DOES THAT SUGGEST TO YOU?

That she is not happy with me

CONVERSATION WITH ELIZA

The preceding actions and conversation actually took place recently, although edited slightly for reporting here. It is an indication that "counseling" by computer is already available to the general public.

Eliza was born about 18 years ago as an exercise in the simulation of artificial intelligence (Weizenbaum, 1965). As such, the program was not intended to be taken seriously as a source of personal help. It is presented here to introduce the topic of "Microcomputers in Counseling." However, the unguarded, unethical, and, perhaps, illegal and dangerous use of the program which was discovered deserves attention elsewhere.

The purpose of this article is to describe the growth in microcomputer use in our society, and in guidance and counseling. Then, after viewing the actual state of current use of microcomputers, some of the challenges facing guidance and counseling will be discussed.

MICROCOMPUTER USE IN SOCIETY

"By speaking commands to a computer that talks back to him, Robbie Marince uses the phone, turns his TV on and off, writes letters and takes college-level courses by satellite. The sophisticated but patchwork system was built by his brother Gary because Robbie was paralyzed from the neck down in a 1977 car wreck...The ingenious system has an

Apple II plus computer as its brain. It is triggered by a Scott Instruments Voice-entry Terminal...A Speech Plus Prose 200 component... generates its own speech "(Oakland Press, May 11, 1983).

While not everyone wants or needs the microcomputer-based system Robbie has, it indicates what can be done using ingenuity and "off-the shelf" components. And, the acquisition of microcomputers is increasing steadily.

In the past three years, over 5 million personal computers (i.e., microcomputers) have been sold (Time, January 3, 1983). At least two universities will be requiring their students to purchase microcomputers, Carnegie-Mellon and Drexel, while others are making computer literacy a graduation requirement (Benderson, 1983).

"Almost one-half of the country's labor force is now working in information assembling, exchange, or dissemination...predominantly computer based...about one-half of all school districts in the country offer students access to at least one computer terminal" (Alumni News, May, 1983).

Much of the growth in the use of microcomputers in the society has promptly followed certain other dramatic developments. For example, a single, Thumb nail-size microchip inside a microcomputer can do the work of the equivalent of more than 40 of the original, house-size electronic computers created in 1946 (Benderson). Dr. Bernard Galler of the University of Michigan Computing Center predicts continuing significant increases in the storage capacity (i.e., memory) and speed of all computers, while their physical sizes decrease, (Midland, June 24, 1983). Concurrently, costs will decrease; even now, the $600 list priced Commodore 64 is selling for under $150.

Another significant development is "networking," which is the "ability to have access to more than one computer system and the integration of any kind of computer into a system - the ability of computers to talk to each other and share information" (e.g., CompuServe and Eliza) (Detroit Free Press, July 17, 1983). Networks greatly increase the programs, computing power, and information available to a single computer.

MICROCOMPUTER USE IN COUNSELING

Efforts to develop uses of computers in counseling, for more than record-keeping and data-processing, gained prominance in the 1960's and early 1970's (Katz and Shatkin, 1980). Hence, actual microcomputer uses are phenomena of just the last decade or so.

While counseling applications are limited compared to other fields, microcomputer programs (i.e., software) have been developed in the areas of career guidance, testing, interviewing, administration, and personal counseling. Among the best, comprehensive counseling software references are Johnson and Blakely (1983), Bellotto (1983), Maze and Cummings (1982), and Johnson(1983). The following categories and listings of available programs are based on those references and other sources. The Microcomputer(s) for which the software is designed and source(s) of additional information are indicated parenthetically at the end of each listing; the sources are keyed by letters to the references given at the end of this article.

CAREER GUIDANCE SYSTEMS:

Career Directions - "provides self and occupational exploratory activities which: 1) develop a profile of career interests and abilities;

2)delinate...occupations relating to the profile; and 3) involves user in...plans to enter (an) occupation." (Apple II or II+ -48k; B)

Career Passport- "process for developing a profile of employability for high school students based on their life experience." (Apple II; B)

Career Scan- "eight-item questionnaire which selects appropriate occupations for junior high and senior high students to explore." (Apple II+ or TRS-80; B)

Career Scan IV- for high school students to "search and explore... occupations in conjunction with their interests and abilities." (Apple II, TRS-80, or PER-48k; B M&C)

CCAPP: Computerized Career Assessment and Program- Planning- "helps students with interest and abilities, career clusters and their characteristics, and career plans." (Apple II -48k; B)

Choices: Computerized Heuristic Occupational Information and Career Exploration System- provides comprehensive occupational and educational information based on a person's characteristics, preference needs, and abilities. (Apple II, Commodore, TRS-80; J&B)

C-Lect: Computer Linked Exploration of Careers and Training- four-part program of self-assessment and interpretation, occupational information, education and training resource, and financial aid. (TRS-80 II or 16; CG)

C.O.I.N.: College Search Program - "to match variables most often used in searching for two-and four-year colleges with college...criteria." (Apple II or II+, TRS-80 I or III; B, M&C

C.O.I.N.: Coordinated Occupational Information Network - "seven-question interactive format...to match...preferences to career titles." (Apple II or II+ 48K, TRS-80 I or III; B

C.O.I.N.: Hard-Disk Information System - This system enables user to "have access to C.O.I.N.'s extensive data-base of career and training program information." (Apple II or II+; B, M&C)

COLLEGE SCAN IV - "helps students narrow down their choices of colleges...based on their interests and needs." (Aple, TRS-80, PET-48K; B, M&C)

DISCOVER II - "combines career guidance and search strategies to provide...a link between relevant self-and occupational-information." (TRS-80 II Or 16, Apple II+, Tailor-made 5100, IBM-PC; B,M&C)

ENCORE - "five-part computer-assisted system designed for adults who have work or life experiences that might deserve college credit and who want to explore career and education options. " (TRS-80 II, Apple II+; B, M&C)

GIS: Guidance Information System - "career information covering occupations, educational opportunities and financial aid information." (Apple III or TSC Dolphin; B, M&C, J&B)

McCVIS: Microcomputerized Vocational Information System - "provides information about occupations and colleges for high school and community

college populations." (Apple II; B)

MICRO-CHOICES - "interactive...career awareness system...(with) access to...career information and encourages...career exploration and decision making." (Apple II- 48K, PET 8032 or 4032, TRS-80 III; B)

MICRO - QUEST - "21-item questionnaire which matches clients to occupations...based on personality, abilities, and job performance." Interfaces with EUREKA'S information files on microfiche. (Apple II+; B)

MICRO - SKILLS - Uses the EUREKA skills Inventory to "calculate the degree of matching between each occupation and the clients skills." (Apple II+; B, M&C, J&B)

SEEC: Self Evaluation and Exploration in Careers - "A 120 item questionnaire...dealing with 'worker satisfiers' and job activities. The output is a list of jobs best matching those satisfiers." (TRS-80 III-48K; B)

SIGI: System of Interactive Guidance and Information - "integrated, individualized career guidance program that teaches the process of career planning and decision making, while providing...career information." (TRS-80 II; B, M&C, J&B)

WORK MATCH - selects occupations using D.O.I. data to match a person's worker trait data. (TRS-80 III; CG)

TESTING:

Automated Manual of Psychiatric Diagnosis (DSM II) - based on clinician responses to a series of questions, "the computer evaluates and lists all of the diagnoses for which the patient qualifies." (Apple II+, IIe or III; PSS)

Biopolar Psychological Inventory - "administration, scoring, norms, scaling, interpretation, profiling, significant items, and report writing. All results are based on 15 bipolar scales." (Apple II+, IIe or III; PSS)

Computer Generated MMPI Interpretation - "has four major sections: (1) General profile interpretation, (2) Interpretation based on single scale elevation, (3) Chemical abuse profile, and (4) Treatment plan... prints a five to six page narative style report based on...scores typed into the computer." (IBM -PC, Apple II+, IIe or III, TRS-80 I or III, Osborne I; PSS, LSA, PP)

Computerized Holtzman Interpretation - "analyzes the protocol and prints out a report, as well as scores of the 22 Holtzman Inkblot Technique variables, obtained from standard administration and scoring." (Apple II+, IIe or III, TRS-80 I or III, Osborne I, PSS)

Computerized Rorschach System - "generates descriptive statements... based on ten universal Rorschach scores. Gives graphical displays and descriptive statements based on T-score." (Apple II+,IIe or III, TRS-80 I or III, Osborne I; PSS)

INTERVIEWING:

Developmental History Report - "automated structured interview which gathers basic developmental information and generates a written narrative...about areas relevant for developmental assessment." (Apple II+, IIe or III; PSS)

Problem/Symptom Checklists - intended as a computerized comprehensive intake interview. The report is more graphical than narrative. (TRS-80 III, Apple II, II+ or IIe, Sanyo MBC 1000 or 2000; PA)

Psycho/Social History Report - "automated structured interview which gathers basic information and generates a written narrative... which covers most of the areas relevant for a psychological report." (Apple II+, IIe or III; PSS)

Self-Exploration Series - "interactive guidance system which allows students to learn more about themselves, "includes "Who Am I," "Career Exporation," and "Study Skills." (Apple II+; EMC)

TEST PREPARATION:

CEEP: College Entrance Exam Preparation - "provides individualized training to help students prepare for college entrance examinations, particularly the Scholastic Aptitude Test (SAT) and similar achievment and aptitude tests." (Apple II; B)

Peabody Individual Achievement Test (PIAT) - "produces a 6 page report,...converts raw scores to grade equivalents for all subtests." (Apple II+, IIe or III, TRS-80 I, II or III; PSS, PP)

Sacks Sentence Completion Test (SSCT-K) - administers, scores and evaluates responses to 60 sentence stems, grouping them into 15 contact areas and four major areas. (Apple II+, IIe or III; PSS, PDS)

16 PF Clinical Interpretation - report sections include: Clinical, personality profile, diagnostic, matched occupational profile, and medical concerns. "The sixteen sten scores are typed into the computer...A two to six page report in narrative style is printed." (IBM-PC, Apple II+, IIe or III, TRS-80 I or III, Osborne I; PSS, PP)

The Bender Report - "provides for scoring and interpretation of child and adult protocols" of the Bender Gestalt test and for a narrative report (Apple II+, IIe or III;PSS)

Vocational Interest Profile Report (VIP) - "administers, scores, and interprets the Interest Check List." A five section report is printed. (Apple II+, IIe or III; PSS)

Wechsler Adult Intelligence Scale (WAIS) - "provides for the entry of relevant demographic data, scaled scores, and behavioral observations" for a narrative report. Different versions and reports are available. (Apple II+, IIe or III, TRS-80I, II or III, IBM-PC; PSS,PP)

Wechsler Intelligence scale for Children (WISC)- "provides for the entry of relevant demographic data, raw scores, and behavioral observations" and for a narrative report. Different versions and reports are available. (Apple II+,IIe or III, TRS-80 I, II or III, IBM-PC; PSS,PP)

Computer-Assisted SAT Classroom Kit- "three part integrated learning system that combines test taking with diagnosis of results, prescription for - improvement and drill exercises for increased learning and speed." (Apple II, II+ or III; B)

Scholastic Apptitude Test Preparation Series- "series of 25 programs that offer comprehensive practice and scoring of verbal and Mathematics questions in the same form as College Boards." (Apple, TRS-80, PET, Ohio Scientific, Northstar, PDP-11, Heath/Zenith, or Atari; B)

ADMINISTRATIVE:

Calendar-Date Book- Such programs are available for most major microcomputers.

Computer Billing System for Psychologists- "simplified billing to patients and fills out insurance forms." (Apple II+, IIe or III; PSS)

Counselor Log- "keep track of daily activities and generate complete and accurate reports covering a specific period of time." (Apple II+; EMC)

CSP: Counselor Support Program - "identify students who have not had recent counseling appointments." (TRS-80 I, II or III; J&B)

Mailing Lists- Such programs are available for most major microcomputers.

Psychological/Medical Office Management System- "system for processing automated accounts receivable and controlling the office schedules." (Any computer with CP/M or CP/M-86; PSS)

Word Processing and Text Editing- Such programs are available for most major microcomputers.

PERSONAL COUNSELING:

Eliza- "client centered approach...designed for demonstration purposes" (Apple, TRS-80; S&P, J & B)

Psychotherapy- "a psychoanalytical approach...designed for demonstration purposes." (S&P, J&B)

Plato DCS- "to assist in resolving personal dilemmas by... progress through...five sequenced and interrelated processes." (S&P)

ISSUES INVOLVED

A number of issues are raised by the growing attention to the use of microcomputers in counseling. Some of those issues are presented here.

QUALITY OF PROGRAMS:

"We can talk all we want about the creative use of computers... but 95 percent of the software out there is not worth having." (Benderson) In the view of most observers, the poor quality of software is the greatest impediment to the computer revolution. The main reasons for this are the limited number of knowledgeable professionals involved in the creation of the programs and the cost involved in creating good programs.

COST:

While the cost of owning the keyboard component of a microcomputer is falling fast, the total cost of owning a complete system (i.e., keyboard, monitor, disc drive(s), printer, and modum) is considerably more than many advertisements imply. Also, "since there is very little

standardization of parts among the dozens of new competitors, a buyer who has not done considerable homework is apt to find that the parts he needs do not fit the machine he bought" (Time).

THEORETICAL ASSUMPTIONS:

When considering utilizing any computerized approach in counseling, it is very important to ask: "To what extent is any philosophy, any rationale, any model discernible...?" For example, in respect to career guidance programs: "Out of what set of beliefs about human nature and the world of work have the systems evolved? On what basis do the interventions rest? What models of decision-making are represented?" The components in a system, their sequencing, their relationship, their internal structure, etc. are reflections of the biases and/or lack of comprehension of the developer(s). (Kate and Shatkin)

CONTEXT OF USE:

Microcomputers have the power to assist counselors in helping clients in a variety of ways. Also, they could confuse and detract from the counselor-client relationship in ways that are less useful and, perhaps, harmful to clients. What needs to be attended to is the establishment of appropriate ethical guidelines for the use of this technology in counseling. (Sampson and Pyle, 1983).

APPROACH-AVOIDANCE:

Most guidance personnel seem to be caught between their fear of being left behind and their lack of understanding of the new technology and of how best to use it. At the same time, they are encountering an increasing number of clients with more experience with the technology than they have had. (Benderson).

CONFIDENTIALITY:

The more data that is collected from clients and stored in computers, the greater the potential for breeches of confidentiality. While the protection of client information may be no more important when stored by computer than by manual means, the challenges are different and the volume may be greater. (Sampson and Pyle).

GETTING STARTED:

Most of the literature admonishes potential computer users to begin by being clear about their goals, then to search for software to achieve those goals, and then to select the hardware on which to operate the program. The facts are that most professionals have no understanding of the capabilities of computers upon which to develop goals and/or may already have available microcomputers purchased because it seemed like a good idea or because they were needed, primarily, for a non-guidance purpose.

THE CHALLENGE

"The appropriate guidance use of technology is not just one of designing machines but rather of discovering how to use technology to realize counselors' personal and societal goals in particular settings. The future of guidance could well depend on the capacity of the counseling profession to utilize technology effectively." (Walz, 1970).

The prophetic admonition of more than a decade ago could become the ringing indictment of tomorrow if counselors do not accept the challenge. What is needed are an acceptance of the technology, creation of applications, and the provision of professional leadership to achieve these goals.

ACCEPTANCE OF THE TECHNOLOGY

LITERACY:

Acceptance means literacy, and literacy means knowing the basics. In respect to microcomputers, this means knowing how they operate, in general, and their strengths and weaknesses, their potential and limitations.

Most counselors will need to be no more literate about microcomputers than they are about their own cars in order to make effective use of them. Just as it took time and mistakes, instruction by others, and the overcoming of some fears in order to become a competent driver, it will take similar efforts to become competent in the use of microcomputers. And, the rewards, in terms of time saved in getting from one place to another, may be just as great!

Fortunately, some help is already available. Last year's APGA, ACPA, and NASPA conventions were preceded by workshop orientations to computers. A pre-convention workshop and other sessions concerning computers will be held during the MPGA Convention in Grand Rapids. Also, school districts and colleges in the state are conducting computer literacy workshops.

Many of the references at the end of this article can be used to contribute to computer literacy.

KNOWLEDGE OF SOFTWARE:

Another aspect affecting acceptance is knowledge about the character and quality of the available software how do you know it's worth using? The references Maze and Cummings, Bellotto, Johnson, and Katz and Shatkin provide models for evaluating software.

Excellent software evaluations are being done by MicroSIFT Clearinghouse (Northwest Regional Education Laboratory) in Oregon and by EPIE (Education Product Information Exchange) in New York. EPIE and the Consumers Union recently formed an alliance. (Benderson) Also, catalogs produced by Psychological Software Specialists and the NEA Educational Computer Service include evaluations of programs.

In addition, Instructional Strategy Services at the University of Michigan and the ERIC Counseling and Personnel Services Clearinghouse in Ann Arbor provide software consultation.

CREATING APPLICATIONS

Among the most important needs in respect to expanded and effective use of microcomputers in counseling is the creation by professionals of quality software. Where such efforts have been made, the results have been significant (e.g., SIGI and Discover).

The evidence provided earlier indicated the limited number and variety of programs currently available. There are attempts to add to the inventory. For example, a counselor at Oakland Community College (MI) has programmed a microcomputer search of the college's catalog; and a counselor in Evanston (WY) has developed programs for "decision-making,""relationship-simulation," and "problem-solving," and is working on one called "Counselor."

Undoubtedly, there are other professionals "out there" struggling to make the technology work. Encouragement, support, and peer evaluation needs to be provided to these pioneers. Also, there is a need for more systemmatic development of programs.

LEADERSHIP BY THE PROFESSIONALS

If the decade-old challenge of Walz is to be met, counseling and guidance personnel will have to do it - by leardership and example. The following proposals are offered for consideration.

STATE LEVEL:

1. Develop a computer literacy package, particularly pertaining to guidance and counseling, for presentation in workshop form. This could be done by MPGA, or one of its divisions, a university G & C department, an intermediate school district, ERIC-CAPS, and/or the Michigan Association for Computer Users in Learning (MACUL).
2. Precede each MPGA Convention with a literacy workshop as long as needed.
3. Encourage presentation of computer related sessions at the Convention and at chapter and division Conferences.
4. Form a "users" group or network in the state for guidance and counseling personnel as part of MPGA.
5. Hold software "festivals" during state conventions and conferences to demonstrate existing programs.
6. Publish a directory of computers and programs currently in use in guidance and counseling settings in the state.
7. Include a software "exchange" in Quest or the state Journal for practitioners to share samples and ideas.
8. Encourage research into use of microcomputers in guidance and counseling.
9. Form a liaison between MPGA, MACUL, and ERIC-CAPS concerning microcomputers in counseling.

NATIONAL LEVEL:

1. Develop a periodical for publishing information about computers in counseling-reviews of hardware, software, research, programs etc.
2. Include a software "exchange" in the AACD Journal
3. Publish an annual software directory, for guidance and counseling, in booklet and computer disc forms.
4. Continue pre-convention workshops concerning computers.
5. Encourage more convention content sessions concerning computers.
6. Hold software "festivals" during the conventions.
7. Develop a computer literacy program using "state of the art" technology (i.e., latest microcomputers and lazer disks).
8. Encourage research into use of microcomputers in guidance and counseling.
9. Form a "users" group or network as part of APGA.
10. Form a committee of professionals to work with software publishers.
11. Modify the AACD "Ethical Standards" to include sections covering concerns raised by the use of microcomputers in counseling.

The proposals are not intended to be exhaustive; they are intended to stimulate ideas and efforts for consideration of appropriate use of microcomputers in counseling.

SUMMARY

Clearly, there continues to be an incredible growth in microcomputer use in the society. The use of such technology in counseling

appears to be progressing at a slower pace, reflecting the impact of a number of issues.

There are those who argue that computer use will change our very lives, unlocking here-to-fore unthought of patterns; and that it is inevitable. (Benderson) Surely, as this includes conceptions of counseling, we have to ask: "who will hold the Key-board!"

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